Toxins in Food : *Aluminium*

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In the 1970s, however, doctors noticed some distressing side effects in certain people with chronic kidney disease. Some of these unfortunate people first became anaemic and eventually suffered from dementia. They also developed soft or brittle bones. These patients had been exposed to higher concentrations of aluminium than normal from the large volumes of water used in dialysis. they had also taken large doses of antacids containing "active" aluminium hydroxide.

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Aluminium, a metal which was in use in various countries in the world since the latter part of the nineteenth century, was considered a non-toxic metal. Due to the same reason, vessels turned out of this metal were used in the preparation of food.

However, at the end of the twentieth century, it has become necessary to pay attention to the ill effects of aluminum on the human system.

Aluminium was introduced to the industrial world by Henri Saint Claire Deville. It was described by him around 100 years ago as a bluish white, lustrous, light weight, resonant metal.

Further, it was presented by him as a heat resistant metal which is harmless to humans and suitable for household use. Later, aluminum came to be considered as the most suitable metal for vessels for food preparation. Accordingly metals such as copper and tin which were currently in use, went into disuse.

However, according to recent discoveries, a certain amount of aluminuim infiltrates the food in certain situations. Vessels made out of aluminium reacts with oxygen in the atmosphere and forms aluminium oxide. Aluminium vessels kept exposed to the atmosphere gradually lose their shine due to this process.

Although the layer of aluminium oxide serves as a protective coating, it starts to dissolve in acidic and alkaline media.

Further, due to scrubbing with alkaline materials such as soda in cleaning aluminium receptacles, the layer of aluminium oxide is damaged, exposing the metal. It can be presumed that a certain amount of aluminium enters the food which is cooked in such vessels.

Cooking acidic foods such as tomatoes, fish with gamboge, meat with vinegar etc. in aluminium vessels, storing fruit juices in aluminium vessels, baking foods such as cakes and biscuits in aluminium trays can be hazardous to health. These can lead to a higher intake of aluminium by the human body.

Earlier, machine parts and receptacles made of aluminium were used in the distillery industry and in milk powder manufacture.

The sad situation in this regard was that babies imbibed a considerable amount of aluminum through milk powder. Scientists have found that a child fed on such milk powder has absorbed 173 - 2285 micro grams of aluminium per day in comparison to the 2 - 10 micrograms absorbed by a child fed purely on mother's milk. Due to the revelation of these facts the use of aluminium in food manufacture as well as in the manufacture of milk powder has now been restricted.

In countries which experience acid rain, it has been reported that pipe borne water often contains aluminium. In such circumstances these countries make a constant effort to maintain the correct pH value of water.

The blood plasma of a healthy human being normally contains 10 micro grams of aluminium. 75% - 95% of the 4 - 8 milligrams of aluminium taken in by us along with our daily intake of food is excreted from the system in the form of non-soluble salts in waste matter. Any quantity in excess of this amount of aluminium imbibed by the system could be harmful to the system in several ways.

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The excess compounds of aluminium enters the blood circulation system through the intestinal walls and along with the blood flow reaches the brain where it gets deposited. Scientists have shown that this can cause diseases in the brain.

Aluminium also gets deposited around the body tissues. This happens mostly in blood corpuscles, bones and lungs. With time this will lead to diseases of the blood plasma (anemia) bone diseases (swelling of joints) and lung diseases.

Aluminium which enters the urinary system is deposited in the kidneys and with time the kidneys may stop functioning.

Aluminium ingested with food may cause ulcers in the intestines.

It has to be emphasized that we should as far as possible, rid our lives of the metal aluminium to free ourselves from all these hazards and live a healthy life.